ASSOCIATION FOR MAXIMUM SERVICE TELEVISION, INC.

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May 21,2007

Via Electronic Filing

Ms. Marlene H. Dortch
Secretary
Federal Communications Commission
445 12 Street, SW
Washington, DC 20554

Re: Notice of Ex Parte Communication,
ET Docket Nos. 04-186, 02-380

Dear Ms. Dortch:

On May 18, 2007, Mr. Bruce Franca of the Association for Maximum Service Television (MSTV) met with Mr. Barry Ohlson and Mr. Rudy Brioche: of Commissioner Adelstein's office with regard to the above captioned proceeding.

Mr. Franca discussed MSTV's most recent comments with regard to the OET Receiver Report prepared by Mr. Stephen R. Martin. In particular, Mr. Franca discussed the Report's description of the differences in interference to analog and digital television reception; its findings with regard to extent weak signal conditions occur within a TV station's contour; and, its findings with regard to adjacent channel DTV receiver interference rejection performance. Receiver test results from the University or Kansas and the Canadian Research Centre were also discussed.

Mr. Franca also discussed the obvious deficiencies of the so-called Microsoft TV White Spaces Development Platform and the potential for interference from such personal/portable TV band devices as presented in MSTV's previous filings in this proceeding, Mr. Franca reiterated the need for an open and transparent test program if the Commission elects to test such devices.

The attached document was provided to Mr. Ohlson and Mr. Brioché.

Respectfully submitted,

Bruce Franca
VP, Policy and Technology

CC: Mr. Barry Ohlson
Mr. Rudy Brioche

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Technology Primer

- DTV and Analog Interference Different (see OET Report at 15.2 to 15-3)

- Analog
  - Interference can increase by about 8 dB before viewer "sees" difference
  - Interference can increase by about 20 to 30 dB before picture "unusable"

- Digital
  - Most DTV sets went from perfect picture and sound to ***no*** picture or sound in 1 dB
  - Several DTV sets went from perfect picture and sound to ***no*** picture or sound in 1/10th of a dB

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Technology Primer

- Interference Distances are substantial
  - Most DTV sets provide "perfect" picture with signal of -84 dBm
  - Required co-channel DIU ratio is 15 to 23 dB
  - Interfering signal can not be more than -99 dBm or -107 dBm
- Co-channel 100 mW (+20 dBm) device must be MILES outside TV station's protected contour to protect TV viewers!
  - Intel suggested interference distance as 5 km (Area is 75 sq. km)
  - MSTV/NAB, IEEE and others suggest that actual interference distances are even greater (about 15 km)
- Co-channel interference isn't a same home or nearby neighbor problem

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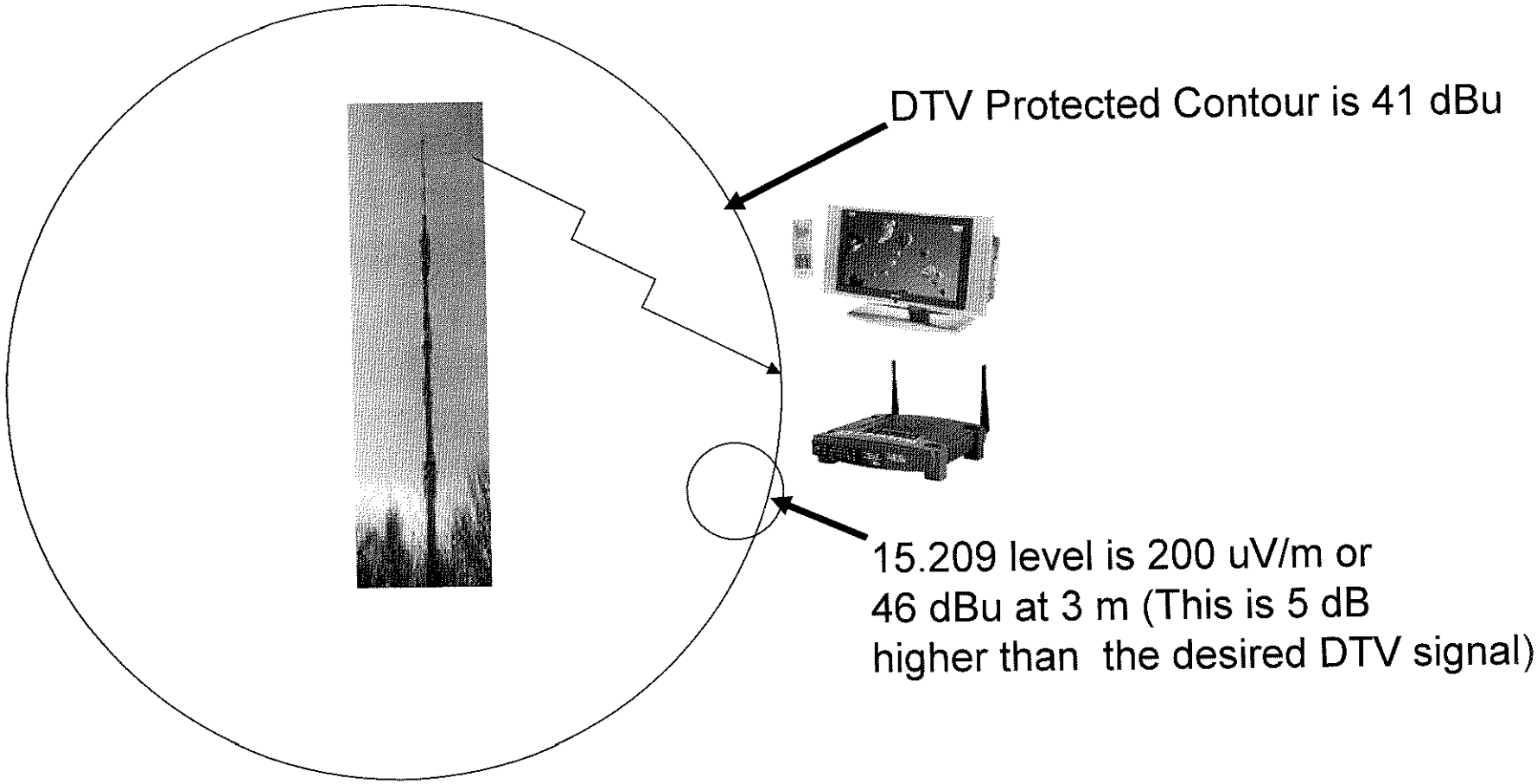
15.209 Limits



Example: DTV Station Transmitting on Channel 35
TV Band Device out-of-band emissions on Channel 35 at 15.209 level

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Let's Do the Math

How do you protect a DTV receiver at the edge of the contour (or receiving a weak but acceptable 41 dBu signal)?

- 15.209 limit of 200 uV/m = 46 dBu
- This is "co-channel energy"
- Co-channel D/U ratio needed is about 23 dB
- Maximum energy for NO interference is:
  - 41 dBu signal – 23 dB = 18 dBu

- BOTTOM LINE: 15.209 level needs to be significantly reduced to prevent interference to DTV reception

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Technology Primer

Type of Interference	Interference Distance
Co-channel	5 to 15 kilometers
Adjacent Channel	Up to 100s of meters *
Out-of-band (15.209)	24 meters (78 feet)

*Distances depend on DTV receiver performance and DTV signal level

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What's the Personal/Portable Issue?

- Device Coalition claims sensing at 30 dB better than DTV receiver will protect viewers
  - SENSING CLEARLY DOESN'T WORK

- Device Coalition claims adjacent channels can be used within TV service area
  - FCC/OET MEASUREMENTS SHOW THIS CAN'T BE DONE

Bottomline Issue is:

INTERFERENCE TO OUR VIEWERS AND OUR ABILITY TO PROVIDE NEW SERVICES

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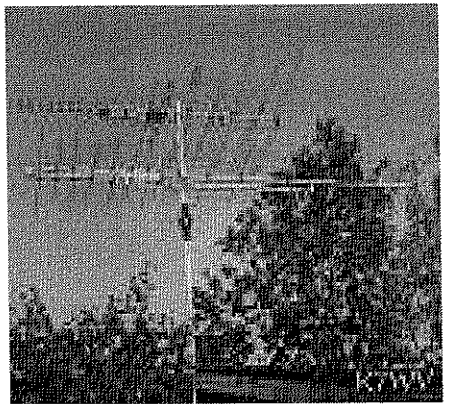
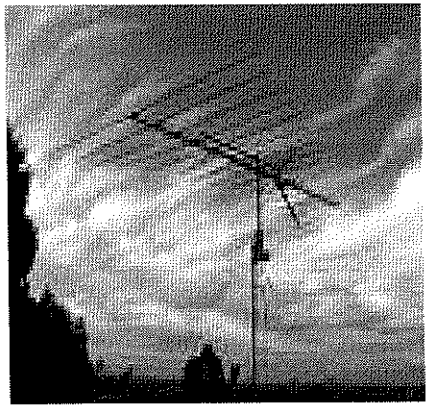
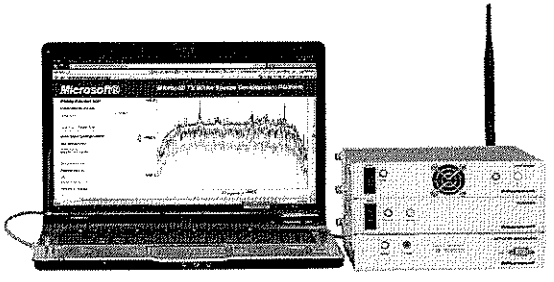
Size Matters





Microsoft TV **White** *Spaces Development Platform Version 2*



- Antenna Size/Gain Matters
  - Large Outdoor TV Antenna Gain can be 10 dB or more
  - TV Band Portable Device Antenna Gain 0 dB or less
- This means if same signal received by DTV receiver with outdoor antenna and the TV band device – the TV band device's signal will be 10 dB less!
- 30dB – 10 dB = ONLY 20 dB better than DTV receiver

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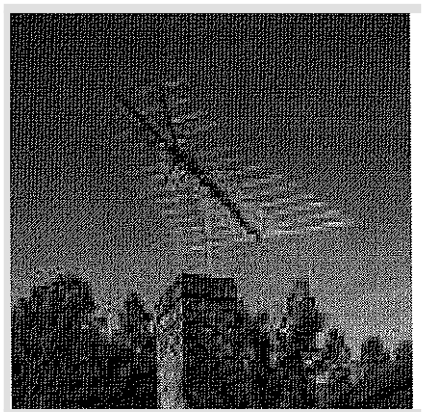
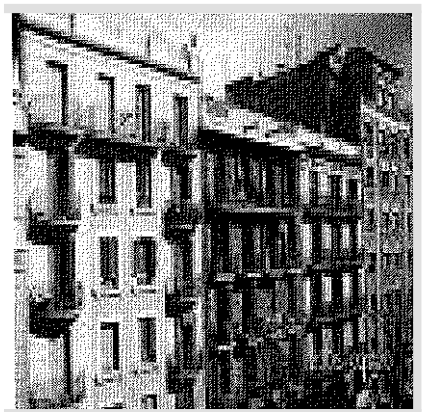
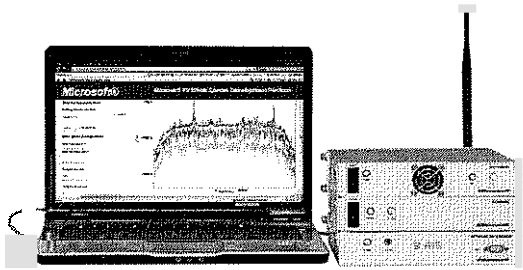
Height Matters





Microsoft TV White Spaces Development Platform Version 2



- TV antenna typically assumed to be at 30 feet (can be more)
- Portable device typically assumed to be at 6 feet
- Height difference between 30 and 6 feet is 7dB
- (30 dB – 10 dB) – 7 dB = ONLY 13 dB better than DTV

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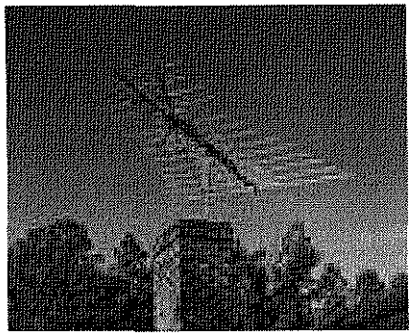
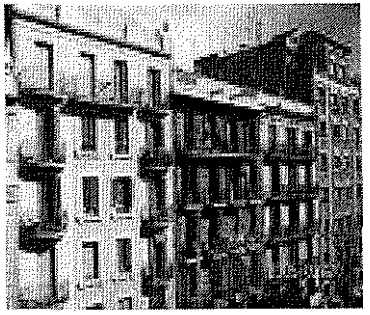
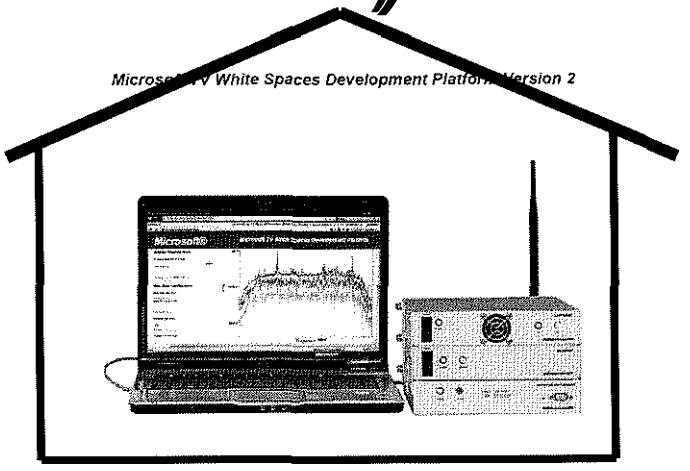
Location Matters (Outdoor vs. Indoor)







- NAF measured indoor data showed that the *"average variation* across rooms for a given frequency channel was 19.8 dB"
- Variation between nearby homes was 30 dB and signals varied from predicted "outdoor" values by 15 to over 55 dB
- Outdoor vs. Indoor signal can easily be 15 dB or more
- (30 db – 10 db – 7 dB) – 15 dB = SENSING FAILS!!

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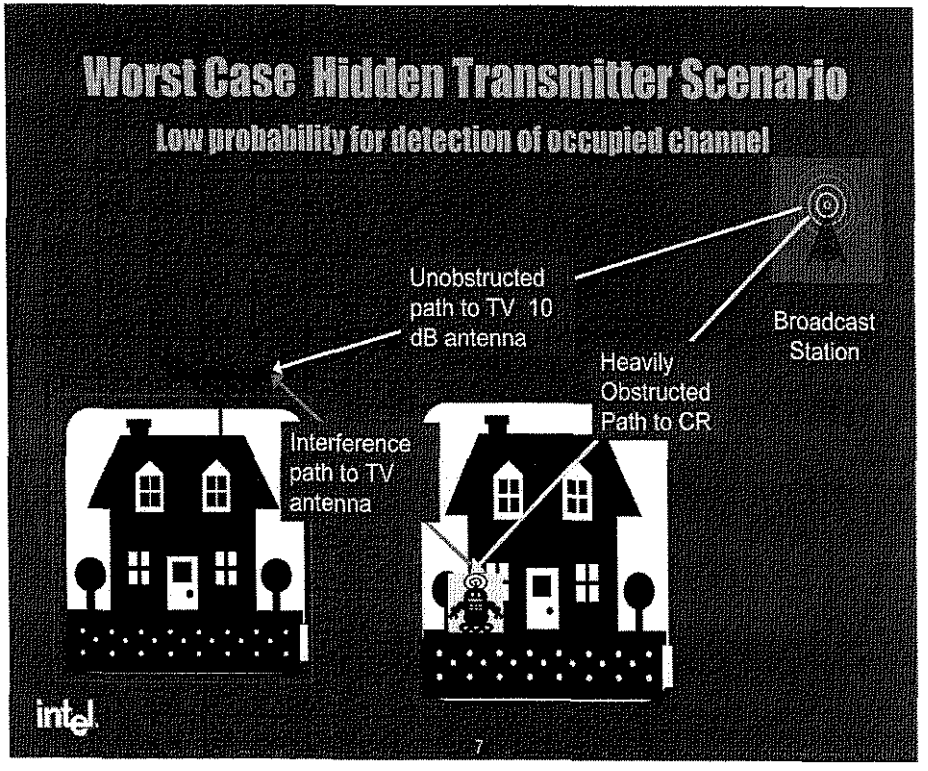
BUT WAIT THERE'S MORE!



Intel Presentation to FCC 11/1/2004

- Sensing must also work for "hidden node" problem
  - DTV signal received by TV Band device can be blocked because of other buildings, terrain, etc.
- Hidden node requires additional margin
- Sensing at 30 dB already fails simple unobstructed model!

Adjacent Channel Interference

- FCC measured Desired-to-Undesired (DIU) ratios for eight "best" DTV receivers
- FCC proposed 10 meters as interference distance
- NAF computes (U) signal level of a 100 mW device at 0 meters:

100mW =		20 dBm
10 m Free Space Loss @ 600 MHz	=	- 48 dB
Signal Strength at 10 m =		- 28 dBm

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Test Results for All Receivers

	D/U for N-1 at 68 dBm	D N FS where IX begins[1]	N-1 Interference Area (% of N Service Area)[2]	D/U for N+1 at 68 dBm	D N FS where I X begins[1]	N+1 Interference Area (% of N Service Area)[2]	Free Space Interference Distance at Edge of D N Contour[3]
						80%	56 meters
FCC Best Receiver	-40.1	-68.1	84%	-42.1	-70.1	80%	56 meters
						87%	112 meters
FCC Worst Receiver	-37.9	-65.9	87%	-37.9	-65.9	87%	112 meters
FCC 2nd Worse	-38.0	-66	87%	-38.3	-66.3	87%	100 meters
FCC Median	-39.3	-67.3	85%	-39.7	-67.7	84%	80 meters
UK Receiver #1	-24	-52	97%	-31	-59	94%	562 meters
UK Receiver #2	-31	-59	94%	-39	-67	85%	178 meters
UK Receiver #3	-30	-58	95%	-29	-57	96%	223 meters
CRC Receiver #1	-29.7	-57.7	95%	-27.5	-55.5	96%	282 meters
CRC Receiver #2	-34.2	-62.2	92%	-37	-65	88%	126 meters
CRC Receiver #3	-36.7	-64.7	89%	-36.5	-64.5	89%	100 meters
CRC Receiver #4	-37.2	-65.2	88%	-39.0	-67	85%	89 meters
CRC Receiver #5	-37.7	-65.7	88%	-37.0	-65	88%	100 meters

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Bottomline

- Sensing at 30 dB below doesn't work
- Adjacent channel operations will cause interference
- Personal/portable devices should NOT be permitted
- Fixed/base station control approach based on geolocation and data base can work and is better solution to rural broadband